

REMARKS

In accordance with the foregoing, claims 1-40 are pending and under consideration.

Rejection of claims 1-36 Under 35 U.S.C. § 103(a)

The Office Action rejects claims 1-40 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,092,334 issued to Choi et al. (hereinafter referred to as "Choi") in view of U.S. Patent No. 5,956,307 issued to Koudo et al. (hereinafter referred to as "Koudo"). This rejection is respectfully traversed.

Choi and Koudo, taken separately or in combination, do not disclose, teach, or suggest at least, "if it is determined that the data recording error has occurred, rotating the optical disc at an adjusted constant angular velocity which is lower than the predetermined constant angular velocity," as recited in claim 1.

Choi discloses a method of detecting a defect area of a disk, so that unnecessary speed reduction can be eliminated and data can be written even in a defective area. In Figure 5 and col. 3, line 61 through col. 4, lines 5, Choi discloses,

"If successfully-decoded ATIP data is not received for a while or the ATIP_sync signal is not received (S50), the microcomputer 80 considers that this unstable recording state is caused from a defect of current recording area, thus it conducts a buffer underrun preventing function, requests stop of data transmission to the external host, and suspends recording temporarily.

After that, the microcomputer 80 reduces current recording speed adequately through the servo unit 70 and the driving unit 71 (S51) and it moves the pickup 20 to the record-suspended point and resumes the recording operation at that point (S52)."

In item 2 on page 2 of the Office Action mailed February 22, 2007, the Office Action notes that Choi does not disclose "constant angular velocity" as recited in claim 1. Accordingly, Choi may have the same problems as discussed in the Description of the Related Art section of the present application. Choi may have sharp variations in the recording velocity and take a longer time to record and/or reproduce data. Choi does not even recognize the problem of sharp variations in recording velocity causing delays in recording and/or reproducing data.

As indicated in paragraph [0012] of the specification, one of the benefits of the present invention is that the present invention provides for stably recording data on and/or reproducing data from an optical disc within a shorter recording and/or reproduction time in spite of a defect of the optical disc. Because Choi does not even recognize the problems caused by sharp variation in recording velocities causing delays in recording and/or reproducing data, Choi does not address the problem solved by the present invention.

In addition, because Choi does not disclose “predetermined constant angular velocity” and “adjusted constant angular velocity” as recited in claim 1, claim 1 is patentably distinguishable from Choi.

In item 2 on page 2 of the Office Action mailed February 22, 2007, the Office Action asserts, “Koudo discloses a device for controlling the rotation of an optical disc wherein the disc is rotated at a constant angular velocity.” However, Koudo does not cure the deficiencies of Choi as discussed below.

Col. 32, lines 30-35 of Koudo discloses, “In an extreme case, a disk is rotated at a constant angular velocity. In this case, the power consumption and heat generation of the motor can be suppressed to a very low level as compared with the prior art case of constant linear velocity reproduction.” Although Koudo discloses a disk rotated at a constant angular velocity, Koudo does not recognize the problem of sharp variations in recording velocity causing delays in recording and/or reproducing data. Koudo does not disclose, “recording the data on an optical disc that is rotating at a predetermined constant angular velocity,” and “if it is determined that the data recording error has occurred, rotating the optical disc at an adjusted constant angular velocity which is lower than the predetermined constant angular velocity,” as recited in claim 1. Accordingly, Koudo does not disclose the circumstances under which an optical disc is rotated at a predetermined constant angular velocity and an adjusted constant angular velocity.

In item 2 on pages 2-3 of the Office Action mailed February 22, 2007, the Office Action asserts, “It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the recording device as disclosed by Choi with the rotation controlling device as disclosed by Koudo, the motivation being to lower power consumption and lessen heat generation within the drive.” This assertion is respectfully traversed.

As indicated in col. 1, lines 45 through 50, the object of Choi is to provide a method of detecting a defect area of a writable disk more exactly in order to ensure successful data writing on a defect area through timely recording speed reduction. In contrast, Koudo teaches rotating a disk at a constant angular velocity to reduce power consumption and heat generation of the motor (col. 32, lines 30-35). Therefore, one having ordinary skill in the art at the time of the invention would not have been motivated to combine Koudo with Choi.

In response to these arguments, page 5 of the present Office Action asserts that Koudo’s Abstract indicates that a phase error signal is fed to the spindle motor to regulate speed in a constant linear velocity (CLV) mode. The Office Action asserts, “the combination of Choi and Koudo is valid since Choi clearly discloses altering the rotation speed of a disc based on signal

error and Koudo discloses both constant angular velocity (CAV) and CLV rotation and the switching between CLV and CAV in order to conserve power and regulate heat generation.”

Applicants respectfully submit that Choi and Koudo, taken separately or in combination, do not disclose, teach, or suggest at least, “if it is determined that the data recording error has occurred, rotating the optical disc at an adjusted constant angular velocity which is lower than the predetermined constant angular velocity,” as recited in claim 1

Koudo does not disclose a device for controlling the rotation of an optical disc, wherein the disc is rotated at a constant angular velocity. Col. 32, lines 30-35 of Koudo only disclose the advantages of constant angular velocity. Col. 32, lines 35-38 of Koudo disclose the disadvantages of constant angular velocity. Accordingly, Koudo only discloses the advantages and disadvantages of constant angular velocity. Koudo does not disclose, “if it is determined that the data recording error has occurred, rotating the optical disc at an adjusted constant angular velocity which is lower than the predetermined constant angular velocity,” as recited in claim 1. Koudo does not disclose, teach, or suggest performing the method step using an adjusted constant angular velocity if it is determined that a data recording error has occurred.

Therefore, for at least these reasons, claim 1 is patentably distinguishable over the cited references.

Claims 2-8 and 37 depend from claim 1 and include all of the features of claim 1. Therefore, for at least these reasons, claims 2-8 and 37 are also patentably distinguishable over the cited references.

Similarly, Choi and Koudo, taken separately or in combination, do not disclose, teach, or suggest at least, “if it is determined that the data reproduction error has occurred, rotating the optical disc at an adjusted constant angular velocity which is lower than the predetermined constant angular velocity,” as recited in claim 9. Therefore, for at least these reasons, claim 9 is patentably distinguishable over the cited references.

Claims 10-16 and 38 depend from claim 9 and include all of the features of claim 9. Therefore, for at least these reasons, claims 10-16 and 38 are also patentably distinguishable over the cited references.

Similarly, Choi and Koudo, taken separately or in combination, do not disclose, teach, or suggest at least, “if it is determined that the data recording error has occurred, controls the motor driver to rotate the optical disc at a constant angular velocity which is lower than a

predetermined constant angular velocity,” as recited in claim 17. Therefore, for at least these reasons, claim 17 is patentably distinguishable over the cited references.

Claims 18-24 and 39 depend from claim 17 and include all of the features of claim 17. Therefore, for at least these reasons, claims 18-24 and 39 are also patentably distinguishable over the cited references.

Similarly, Choi and Koudo, taken separately or in combination, do not disclose, teach, or suggest at least, “if it is determined that the data reproduction error has occurred, controls the motor driver to rotate the optical disc at a constant angular velocity which is lower than a predetermined constant angular velocity,” as recited in claim 25. Therefore, for at least these reasons, claim 25 is patentably distinguishable over the cited references.

Claims 26-32 and 40 depend from claim 25 and include all of the features of claim 25. Therefore, for at least these reasons, claims 26-32 and 40 are also patentably distinguishable over the cited references.

Similarly, Choi and Koudo, taken separately or in combination, do not disclose, teach, or suggest at least, “if it is determined that the data recording error has occurred, rotating the optical disc at an adjusted constant angular velocity which is lower than the predetermined constant angular velocity” and “if it is determined that the data reproduction error has occurred, rotating the optical disc at an adjusted constant angular velocity which is lower than the predetermined constant angular velocity,” as recited in claim 33. Therefore, for at least these reasons, claim 1 is patentably distinguishable over the cited references.

Claims 34-36 depend from claim 33 and include all of the features of claim 33. Therefore, for at least these reasons, claims 34-36 are also patentably distinguishable over the cited references.

Accordingly, withdrawal of this rejection is respectfully requested.

Summary

Claims 1-40 are pending and under consideration. It is respectfully submitted that none of the references taken alone or in combination disclose the present claimed invention

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Serial No. 10/798,270

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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